

STUDIES IN MANETTIA (RUBIACEAE)  
SECTION HETEROCHLORA SCHUM.

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This is the first of an anticipated series of five papers on the classification of the genus Manettia in the traditional four sections followed by a general discussion.

I recognize five species in sect. Heterochlora. The corolla is red, sometimes golden yellow towards the apex, bulbous or more commonly cylindrical, sometimes hypocrateriform, 13-25 mm. long, 2-5 mm. wide, usually densely pubescent outside, glabrous within except for a ring of hairs near the base. The disk is well developed and free from the calyx. Anthers are sessile and included. Stigmas are oblong and obtuse at the apex.

Key to Species

1. Corolla bulbous (9-15 mm. wide above the middle, 4-7 mm. wide at the base); calyx-lobes broadly ovate, 3-nerved.  
N. Paraguay. . . . . M. rojasiana
1. Corolla usually cylindrical, sometimes hypocrateriform.
  2. Calyx-lobes linear-lanceolate, attenuate-acuminate, 10-15 mm. long, 1-nerved above the base, glabrous on both sides, ciliate. S. Brazil.
    3. Flowers solitary, or 2 or 3 on a very short (1-2 mm. long), peduncle in the axils; corolla fleshy, densely pubescent outside; free portion of stipules deltoid to lanceolate . . . . . M. pedunculata
    3. Flowers 3-7 in cymelike inflorescences, or solitary in the leaf axils with long pedicels; corolla membranous, moderately to sparsely pubescent below and nearly glabrous above on the outside; free portion of stipules rounded. . M. campanulacea
  2. Calyx-lobes broadly ovate, or when lanceolate, then short-acuminate, 5-10(13) mm. long, 3(-5)-nerved, pubescent on both sides.
    4. Flowers solitary, rarely two or three; calyx-lobes pubescent on both sides; capsules usually turbinate, mostly 7-10 mm. long; stipules merely glandular-toothed, devoid of cilia. S. Brazil and southeastward . . . . . M. luteo-rubra
    4. Flowers few to many in umbels; calyx-lobes merely ciliate or pubescent on the lower side as well, glabrous or nearly so on the upper side; capsules usually subglobose, mostly 4-6 mm. long; stipules mostly ciliate as well as glandular-toothed, often aristate. Santo Domingo, Venezuela and Columbia . . . . . M. calycosa

M. rojasiana Chod. & Hassl. Bull. Herb. Boiss. II. 4: 91.  
1904. Syntypes: Hassler 5405, 8282. figs. 1-5.

Branches herbaceous, subterrate, more or less pubescent; free portion of stipules deltoid, acute, toothed, often reflexed; petioles 1-3 cm. long, pubescent; leaf blades membranous, ovate to ovate-lanceolate, acuminate to cuspidate at the apex, acute at the base, 5.5-10.5 cm. long, 3-4.3 cm. wide, glabrescent except the midrib and ciliate margins, with 4 or 5 lateral main veins on each side of the midrib, reticulum level with the surface; flower solitary; pedicels 4-7 cm. long, mostly exceeding the subtending leaf, densely pubescent; ovaries turbinate, about 4 mm. long, densely pubescent with white hairs; calyx-lobes 4, spreading, membranous, broadly ovate, 8-12 rarely 15-19 mm. long, 5-8 rarely 10 mm. wide, acute to acuminate, mostly 3-nerved, more or less pubescent on both surfaces, with short subulate interposed teeth; corolla fleshy, bulbous, 16-22 mm. long, 4-7 mm. wide at the base, 9-15 mm. wide above the middle, narrowed at the apex, 4-lobed, the lobes 1.5-2 mm. long, triangular, erect; outer surface of corolla densely covered with broad multicellular hairs, inner surface glabrous except for a ring of linear hairs near the base; anthers 6-7 mm. long, with the connective extending into an acute triangular apex, sessile, attached near the apex in short-styled flowers, attached near the middle in long-styled flowers; stigmas oblong, obtuse; disk free; capsules obovoid to turbinate, 7-12 mm. long, 6-8 mm. wide, moderately appressed pubescent.

Paraguay: Sierra de Maracayu: Hassler 5405 (BM, F, G, GH, K, MO, NY, S); upper River Apa: Hassler 8282 (BM, F, G, GH, K, MO, NY, P, S, UC, US); Sierra de Amambay, pr. Esperanza: Hassler 10269 (BM, G), 10527 (BM, F, G, K, MO, NY, S, UC); Alto Paraguay: Dept. San Pedro: Primavera: Woolston 1556 (K).

M. pedunculata (Spreng.) Schum. in Mart. Flor. Bras. 6(6): 173. 1889.

Var. pedunculata Figs. 6-13.

Diodia pedunculata Spreng. Syst. Veg. 1: 405. 1825.

M. pseudo-diodia Cham. & Schl. Linnaea 4: 174. 1829.

Type: Sellow. Sellow 326 (B) Photo!

M. pedunculata var. glabra Wernh. Journ. Bot. 57. Suppl. 22. 1919. Type: Miers 3310 (BM)!

Branches subtetragonal, glabrous; free portion of stipules deltoid to lanceolate, reflexed, toothed; petioles 1.7-2 cm. long, pubescent on the sulcate upper side; leaf-blades membranous, ovate-lanceolate, attenuate-acuminate at the apex, acute at the base, 10-12.5 cm. long, 3-3.7 cm. wide, glabrous except the ciliate margins, with 4 or 5 lateral veins on each side of the midrib, reticulum fine and level with the lower surface; flowers 1 to 3 in the axils; peduncles 1-2 mm. long; pedicels about 2.2 cm. long in flowers, 3-3.3 cm. long in fruit, glabrous,

with linear-lanceolate, ciliate bracts at the base; ovaries about 4 mm. long, turbinate, glabrous; calyx-lobes 4, linear-lanceolate, attenuate-acuminate, 1-nerved except the 3-nerved base, ciliate, 13-14 mm. long, erect; corolla fleshy, cylindrical, 20-22 mm. long, 4 mm. wide, densely covered with broad, short (1-2 celled) hairs or with slender multicellular hairs on the outside, glabrous within except for a ring of hairs 3-5 mm. above the base; anthers about 5 mm. long, sessile, attached near the middle of the tube in long-styled flowers; stigma oblong, obtuse; disk free; capsules subcompressed turbinate, about 10 mm. long, 5-6 mm. wide, glabrous.

Brazil: Rio de Janeiro: foot of Gavia, Miers 3310 (BM); Freire Allemao (G); Distrito Federal: Gericino: Brade 25015 (US).

M. pedunculata var. ciliata (Cham. & Schl.) Chung, comb. nov. Fig. 14. M. ciliata Cham. & Schl. Linnaea 4: 176. 1829. Type: Sellow (B) photo!

Differs from var. pedunculata in having: branches strongly tetragonal, densely ciliate on well-developed wings; pedicels, ovaries, and capsules densely pubescent to glabrous. Corolla 15-21 mm. long, densely covered with broad, short hairs or with slender multicellular hairs; calyx-lobes 10-14 mm. long.

Brazil: Rio de Janeiro: Parahyba, Riedel 23 (US); pr. Campos, Riedel 619 (BM, K -- in the envelope, P, US); Sao Paulo: Weir (K).

The specimen Riedel 619 (K) with leaves and capsules is distinct in that the whole plant is moderately pubescent. It is probably M. pedunculata contaminated by M. luteo-rubra.

Dusen briefly described a plant from Serra do Itatiaya, Brazil, collected by Ule, as M. pauciflora (Archiv Mus. Nac. Rio de Janeiro 13: 27. 1905), which is, according to his comparative description, somewhat intermediate between M. luteo-rubra and M. pedunculata. The above mentioned specimen, Riedel 619 (K), appears to be close to M. pauciflora Dusen.

Velloso's Guagnebina lutescens (Flor. Flum. 45, I. t.116. 1825) was transferred to Manettia by Schumann (Mart. Fl. Bras. 6 (6): 186. 1889) with the suggestion that it might be referred to M. pedunculata. However, the short pedicels, short, ovate-lanceolate calyx-lobes, and glabrous corolla do not agree with those of M. pedunculata. (See note at the end of this paper)

M. campanulacea Standl. Field Mus. Bot. 8 (5); 327. 1931. Type: Saint-Hilaire B<sub>1</sub>:42. Figs. 15-17.

This species may be distinguished from M. pedunculata var. ciliata (Cham. & Schl.) Chung mainly by: reflexed, toothed free

portion of stipules rounded; flowers mostly 3-7 in cymelike inflorescences, or solitary in leaf-axils with long pedicels; corolla membranous, sometimes widened at the apex, moderately to sparsely pubescent with broad, short hairs below, somewhat pubescent to nearly glabrous above on the outside, 15-17 mm. long.

Brazil: Minas Geraes: St. Gabriel: Saint-Hilaire B<sub>1</sub>:42 (P, F); Sa. Juliao: Glaziou 19435 (P).

M. luteo-rubra (Vell.) Benth. Linnaea 23: 445. 1850.

Var. luteo-rubra Figs. 18-36, 70.

Guanebina luteo-rubra Vell. Fl. Flum. 46. I.t. 121. 1825.

M. bicolor Paxton, Mag. Bot. 10 (1): 27, tab., 1843.

M. filicaulis Wawra, Oesterr. Bot. Zeitsch. 31: 281. 1881; Itin. Coburgi Bot. 1: 118, t. 17, 1883.

M. bradei Standl. Field Mus. Bot. 8 (5): 330. 1931.

Type: Brade 5281 (S)!

Branches subtetragonal, moderately pubescent; free portion of stipules deltoid to narrowly triangular, acute to acuminate, glandular-toothed, pubescent outside, mostly erect; petioles 5-7(12) mm. long, densely pubescent; leaf-blades usually somewhat thick, ovate to elliptic-lanceolate, acuminate at the apex, cuneate at the base, 4.5-6(11.5) cm. long, 2-2.5 (5.5) cm. wide, moderately pubescent on both sides, with 4 or 5 lateral main veins on each side of the midrib, reticulum level with the lower surface; flowers 1-3 in the axils; pedicels 10-15 mm. long in flower, 15-33 mm. long in fruit, densely pubescent; ovaries turbinate, 2-3 mm. long, densely pubescent; calyx-lobes 4, usually thickish, ascending to reflexed, ovate with narrowed base (5-10 mm. long, about 1.5 mm. wide at the base), acuminate at the apex, 3-nerved, densely pubescent, connate at the base for 0.5-1 mm., with minute teeth, usually devoid of lobules; corolla fleshy, cylindrical, 16-24 mm. long, 2-4 mm. wide, densely pubescent outside with broad 1-2 celled hairs and/or slender multicellular hairs, glabrous within except for a ring of hairs about 5 mm. above the base; anthers 3-3.5 mm. long, sessile, attached about 4 mm. below the apex of the tube in short-styled flowers, attached near the middle of the tube in long-styled flowers; stigmas oblong to linear-oblong, obtuse at the apex; disk free, conspicuous; capsules ellipsoidal to subcompressed turbinate, 6-9 mm. long, 4-5 mm. wide, densely pubescent.

Brazil: Minas Geraes: Caldas, Regnell I: 369 (F, K, S, US), Mosen 1342 (S), Lindberg 103 (S); Corinto, Mexia 5576 (BM, F, G, K, MO, NY, PH, S, UC, US); Serra do Curral, Mun. Nova Lima, Williams 6758 (F, GH, MO, NY, UC, US); between Mata and Serra do Curral, Mun. Belo Horizonte, Magalhaes 1943 (US); Km 50 between Bello Horizonte and Itabinito, Percira & Pabst Herb. No. 98655 (F); Mun. Itabinito, Barreto 5297 (F),

Bello Horizonte, Barreto 3721 (F); Mun. Caete, Barreto 3715 (F); Itabira, Wedell anno 1844 (P); Cambuhy, in Vally of Rio Quebra, Angol, Dorsett, Shamel & Popinoe 1746 (US); Nova Ponte, Magalhaes 266 (F); Passa Quatro, Brade 18925 (NY); Claussen 688 (NY); Claussen March 1839 (G), Saint-Hilaire B<sub>1</sub> 1002 (P), Widgren anno 1845 (S).

Rio de Janeiro: Rio Pacahiba, Gardner 5739 (BM, K); Nova Friburgo, Dusen 1912 (S), C. Vianna Freire 290 (F); between Petropolis and Friburgo, Sandeman 2063 (K); between Ponte Nova and Valverde, Pabst 5352 (F); Serra dos Orgaos Rio dos Mortas, Brade 11454 (F).

Sao Paulo: Brade 5281 (S), 6814 (NY), Burchell 4688 (K), Mosen 1343 (S), Riedel 316 (K); Cotia, Constantino 112 (F); mun. Mairipora, Eiten & Eiten 1840 (US); Butantan, Hoehne 21 (F); Rio Claro, Loefgren 541 (F); Franca, Loefgren & Edwall 2067 (F); Mt. Jaragua, Bowie & Cunningham (BM), Gehrt April 1922 (F), Guillemin 401 (G); pr. Cantareira ab. urbe S. Paulo, Wettstein & Schiffner May 1901 (NY); Burchell 4688 (K); Usteri (K).

M. luteo-rubra var. paraguariensis (Chod.) Chung, comb. nov. Figs. 37-59, 71-73.

M. paraguariensis Chod. Bull. Herb. Boiss. 7. App. 1: 82. 1899. Type: Hassler 2511 (not seen).

M. bicolor Hook. f. Bot. Mag. 57: t. 7776. 1901.

M. inflata Sprague, Gard. Chron. 2: 385. t. 169. 1904. Type: Specimen of plant cultivated at Kew Gardens (K, P)!

M. samuelssoniana Standl. Field Mus. Bot. 8 (5): 330. 1931. Type: Lillieskold (S)! Fig. 73.

This may be distinguished from var. luteo-rubra usually by: slender petioles, thinner leaf-blades, slender, often elongated pedicels, membranous calyx-lobes, and acicular short calyx-lobules.

Free portion of stipules erect, or frequently reflexed; petioles mostly 10-25 mm. long; pedicels (15-) 25-50 mm. long in flower; calyx-lobes 4, usually membranous, mostly reflexed, ovate to ovate-lanceolate with narrowed base (7-13 mm. long, 2-5 mm. wide), or lanceolate (7-9 mm. long), 3-nerved, usually with acicular short (1-4 mm. long) interposed lobules; corolla 13-23 mm. long, 3-5 mm. wide, often inflated at the base, densely covered with slender multicellular hairs or rarely with broad 1- to several celled hairs outside; capsules 6-13 mm. long, 4-6 mm. wide.

Paraguay: near summit of Mt. Aroyo-Bostado, E. of Cordillera de Villa Rica, Balansa 2133 (G, K); R. Corrientes, Hassler 4502 (BM, G, GH, K, NY, P, S, UC); vic. Caaguazu, Hassler 8906 (BM, F, G, GH, K, NY, P, UC) SW base of Cordillera de Caaguazu, Dept. Caazapa, West 852 (UC); Caaguazu, Rojas 5042



(US); R. Alto Parana, Fiebrig 5416 (BM, G, GH, K, US); Colonia Presidente Gonzalez, Lindman 11847 (S); Villa Rica, Jorgensen 4311 (F, GH, MO, NY, PH, S, US), 7270 (F).

Uruguay: Salto, Gibert 728 (K)

Argentina: Misiones: Rio Uruguay, Sandeman 4819 (K);

Yguazu Falls, Osten 8200 (S); in distr. urb. Posadas, Lillieskold s.n. (S); San Ignacio--Pastereo Grande, Moreau 21219 (F); Cataratas--Puerto Bemberg, Rodrigo 3688 (F); Santa Ana, Rodriguez 256 (F, P); Pto. Leon, Venturi June 26, 1909 (F); Rio Alto Parana, Zotta (F); Bonpland, Jorgensen 25 (F), Van de Venne Anno 1906 (F); Dept. Candelaria: Loreto Montes 2216 (F); Dept. Frontera Antonio, Krapovickas 2498 (F).

Brazil: Rio Grande do Sul: S. Leopoldo, Ritter 35521 (S); S. Angelo, Lindman 11069 (GH, S); Hamburgerberg, Malme 194 (F, S); Neu Wuerttemberg, Bornmuller 521 (GH); Sao Salvador, Eugenio 2132 (F); pr. Caxias; Rambo 42193 (F).

Sta. Catharina: Ibirma, Smith & Klein 7530 (K, NY, US), Reitz & Klein 3446 (NY, UC, US), 3597 (US); Mun. Dionisio Cerqueira, Smith & Klein 11709 (US); Mun. Itapiranga, Smith, Klein & Schnorrenberg 11748 (US); Joinville, Reintz & Klein 4223 (NY, S, UC, US), 4662 (US); Lauro Mueller--Urussanga, Reitz & Klein 6863 (G, P, US); Rio do Sul, Reitz & Klein 6863 (NY, UC), 8744 (US), 8897 (K, US); Itajaby, Dusen 8401 (S).

Parana: Jaguarihyva, Hatschbach 3225 (US), Joenss 304a (GH, MO, S); Serra do Mar, Dusen 3487 (F, S), 8622 (F, G, S, US), 9904 (GH, MO, S), Ponta Grossa, Dusen 7522 (S), 9911 (BM); Ypiranga, Reiss 91 (F, GH, NY); Curitiba, Gomes 5210 (US), Jessmann (US); Parque Nacional do Iguasu--Palmital, Duarte 1689 (F); Rio Taquaral, Hatschbach 2313 (US).

S. Paulo: Loefgren 43 (P).

Lindman 11069 (S) from S. Angelo, Rio Grande do Sul is interesting in that some flowers have six well-developed calyxlobes and 2 short (3-4 mm. long), slender, 1-nerved lobules

Dusen 8401 (S) from the coastal area of Itajahy, Santa Catharina has stout branches, thickish large leaves and 5-nerved calyxlobes as in Mueller 122 (K) which is the holotype of M. quinquenervia Sprague (Bull. Herb. Boiss II 5: 266. 1905). I believe that these two belong with M. luteo-rubra var. paraguar-iensis, Figs. 60-65.

M. calycosa Griseb. Fl. Brit. W. Ind. 330. 1861.

Type: Imray 65 (GOET). The corolla and the two capsules in the envelope should be the type. The branch with leaves and capsules is M. dominicensis Wernh.

Var. calycosa Figs. 66-69.

M. calycosa var. karsteniana Schum. Mart. Fl. Bras. 6 (6): 175. 1889. Syntypes: Fendler 585!, Funck & Schlim 153!, Schlim 89!

M. calycosa var. latifolia Standl. Field Mus. Bot. 4 (8): 215. 1929. Type: Killip & Smith 20855 (US, isotypes GH, NY).

Branches slender with elongated internodes, subtetragonal to subterete, striate, glabrous to sparsely pubescent especially on the angles, free portion of stipules deltoid to setose, mostly erect, glandular-toothed and/or ciliate; petioles short, 3-5 mm. long, more or less pubescent; leaf blades ovate to ovate-lanceolate, cuspidate at the apex, rounded (rarely subcordate) to cuneate at the base, becoming subcoriaceous and somewhat wrinkled at maturity, slightly reflexed on the margins, glabrous except for the ciliate margins or somewhat hispid beneath especially on the veins, sometimes also somewhat scabrous above, variable in size, 3-8.5 cm. long, 2-4.4 cm. wide, with 3-4 lateral veins on each side of the midrib; flowers few to many in axillary umbels; peduncles nearly glabrous to densely pubescent, 2-10 mm. long; pedicels nearly glabrous to densely pubescent, 5-10 mm. long; ovary glabrous to densely pubescent; calyx-lobes 4, membranous, broadly ovate and acute at the apex to ovate-lanceolate and acuminate at the apex, 3(-5)-nerved, 4-7 mm. long, 2-3 mm. wide, glabrous on the inside, glabrous or sometimes with few hispid hairs on the outside, ciliate on the margins, devoid of calyx-lobules, connate at the base for about 0.3 mm.; corolla membranous, cylindrical or more frequently hypocrateriform, 15-25 mm. long, 3-4 mm. wide, somewhat pubescent to densely pubescent with slender multicellular hairs on the outside, glabrous within except for a ring of hairs 3-7 mm. above the base; anthers included, 3-4 mm. long, sessile, attached near the apex of corolla-tube in short-styled flowers, attached near the middle of the tube in long-styled flowers; stigmas oblong, obtuse; disk free; capsules mostly subglobose, 4-6 mm. long, rarely ellipsoidal-turbinate and 6-7 mm. long, glabrous to somewhat pubescent.

West Indies: Haiti: Imray 65 (GOET) the corolla and the two capsules in the envelope, excluding the branch with leaves and capsules; Santo Domingo: Schomburgk (K); Wright, Parry & Brummel 230 (US). Dominican Republic: Prov. La Vega, Vicinity of Piedra Blanca, 200-500 m, Allard 14207 (S, US); Distr. Sabaneta, Prov. Monte Cristy, banks of Río Cidra, 500-600 m, Valeur 572 (F, K, MO, S, US); Yuna River, Bonao, Augusto 765 (NY), Bonao-Yuna (jungle), Augusto 1380 (GH, NY).

Venezuela: Valley of Pto. La Cruz, El Limon: Jahn 1321 (US), Pittier 9215 (G, GH, NY, US); Caracas: Birschel (K), Funck 438 (G, P), Funck & Schlim 153 (BM, G, P), Kuntze 1275 (NY), Pittier 9934 (G, GH, NY, US), van Landsberge 381 (S), 389 (S); Miranda: Allart 218 (NY, US), Pittier 218 (G), 5971 (US), 7082 (GH, US), 13051 (F, G, NY, US); Aragua: Gines 4156 (US), Killip & Lasser 37764 (US), Steyermark & Farinas 91438 (NY), Williams, Ll. 10458 (F), 10738 (F); Carabobo: Williams Ll. 10991 (F, GH); Zulia: Gines 2042 (US), Bernardi 3175 (NY); Tachira: Steyermark 57139 (F, GH); Río Claro: Saer (F); San Pablo de Mendoza: Pittier 10746 (G, GH, NY, US); between Río

Taquasito and slopes of Morro de Aguaramal, Steyermark 9001 (NY); Merida: Bernardi anno 1956 (NY); Tovar: Fendler 588 (G, GH, K, MO, NY, PH), Ernst 431 (BM), Moritz 34 (BM), Williams, Ll. 10765 (F).

Columbia: Santa Marta: Funck 417 (K), Smith 1392 (BM, F, G, GH, MO, NY, P, PH, US); Norte de Santander: Cuatrecasas 12230 (US), 13408 (US), Fosberg 21739 (P, US), Kalbreyer 360 (K), Schlim 89 (BM, G, K, P); Cundinamarca: Grant & Fosberg 9376 (P, UC, US), Pennell 1785 (NY), 1858 (NY, US); Magdalena: Apolui 513 (F), Cuatrecasas & Romeo 24321 (US), Giacometto 59 (US); Boyaca: Lawrence 404 (BM, GH, MO, S).

M. calycosa var. scaberrima (Wernh.) Chung, comb. nov.

M. scaberrima Wernh. Journ. Bot. 57 Suppl. 24. 1919.

Syntypes: Linden 895, Triana 142.

M. holtonii Wernh. l.c. 23. 1919. Type: Holton 606.

Distinguished from var. calycosa by: the densely hispid abaxial side of calyx-lobes and of leaf-blades; the upper side of leaf-blades frequently scabrous; young branches, peduncles, pedicels, ovaries, and capsules usually pubescent.

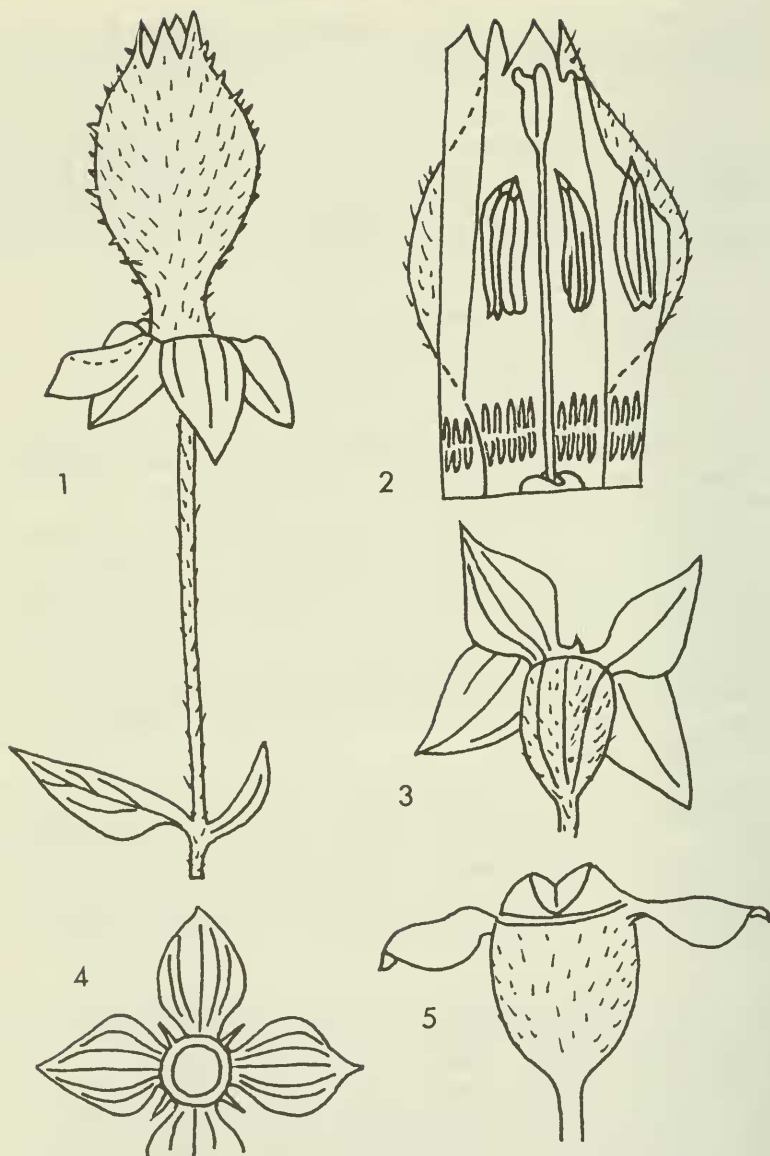
Columbia: Dept. Antioquia: Daniel 2215 (US), Hodge 6948 (US); Dept. Caldas: Salamina: Tomas 1856 (US), Medellin: Toro 409 (NY), 825 (NY), 897 (NY), Tracy 379 (K); Dept. Cundinamarca: García 7675 (US), 11850 (US), 12330 (F, US); Ibague: Andre K558 (K), Goudot 1 (K); Prov. Marquita: Ibague: Linden 895 (BM, G), La Palmilla: Triana 142 (BM, P); Dept. Tolima: Killip & Hazen 9604 (GH, K, NY, PH, US), Pennell 3432 (GH, MO, NY); Dept. El Valle: Cuatrecasas 22630 (F); Pennell, Killip & Hazen 8557 (NY, PH); Dept. Cauca: Holton 606 (G, GH, K, NY, PH, UC), Lehmann 7216 (K).

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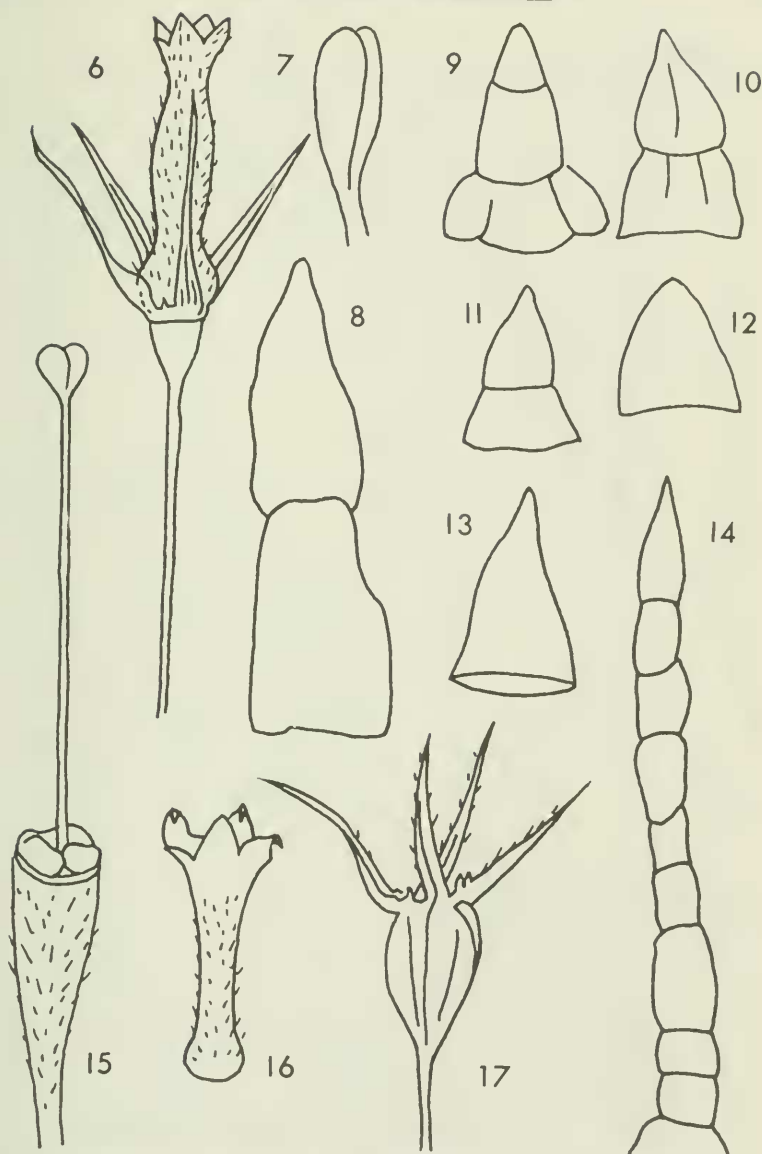
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Note on Guagnebina lutescens Vell. The glabrousness of the corolla of M. lutescens (Vell.) Schum. does not agree with M. luteo-rubra (Vell.) Benth. or var. paraguariensis (Chod.) Chung (M. inflata Sprague), although its identity with the latter was suggested by Wernham (1919). Within the limits of the specimens I have studied, the northern limit of the range of M. luteo-rubra var. paraguariensis is Sao Paulo.

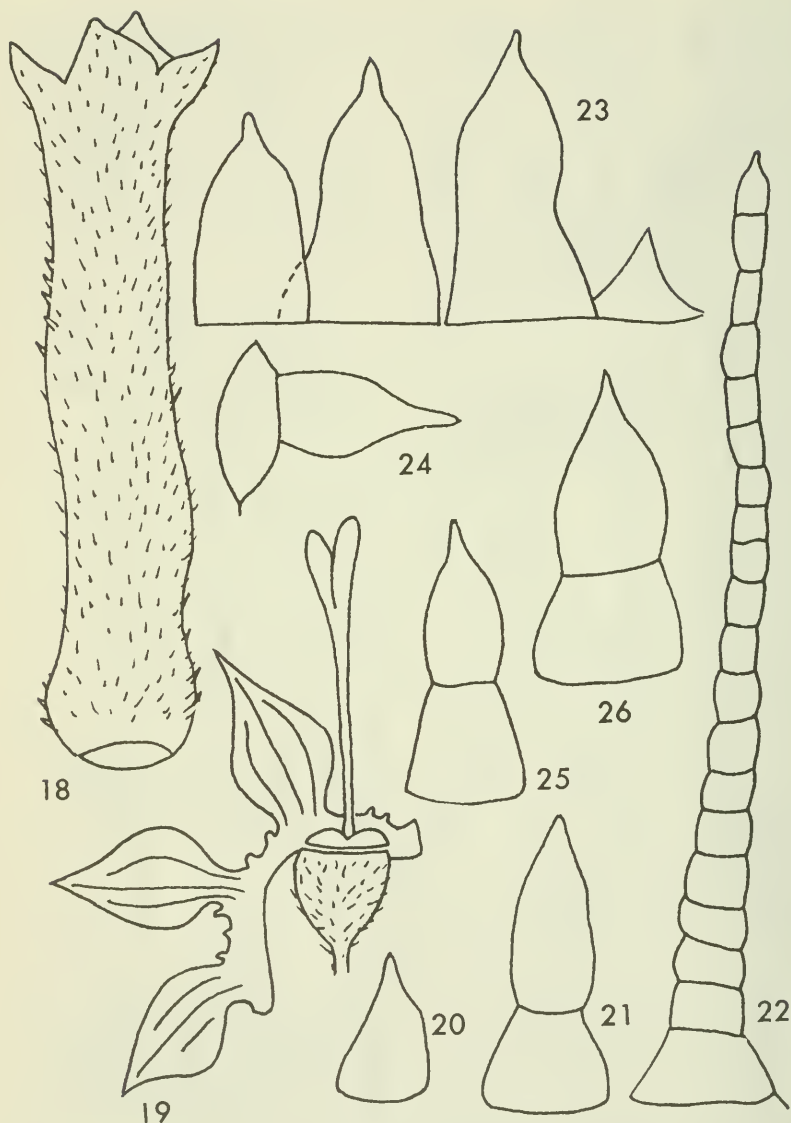




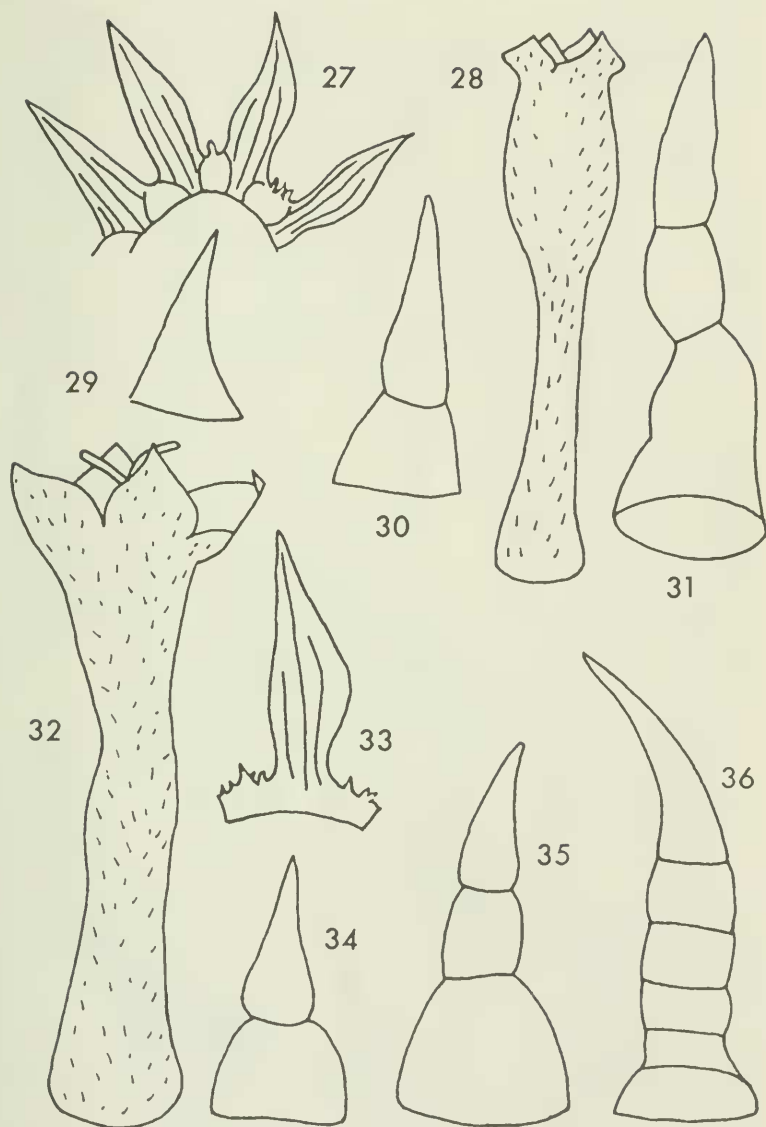
Figs. 1-5. *Manettia rojasiana*. 1. Flower, x2 (Hassler 5405, G). 2. Corolla, opened, x3 (Hassler 5405, G). 3. Ovary and calyx-lobes, x2 (Hassler 5405, MO). 4. Calyx-lobes and lobules, x2 (Hassler 10527, G). 5. Capsule, x2 (Hassler 10527, MO).



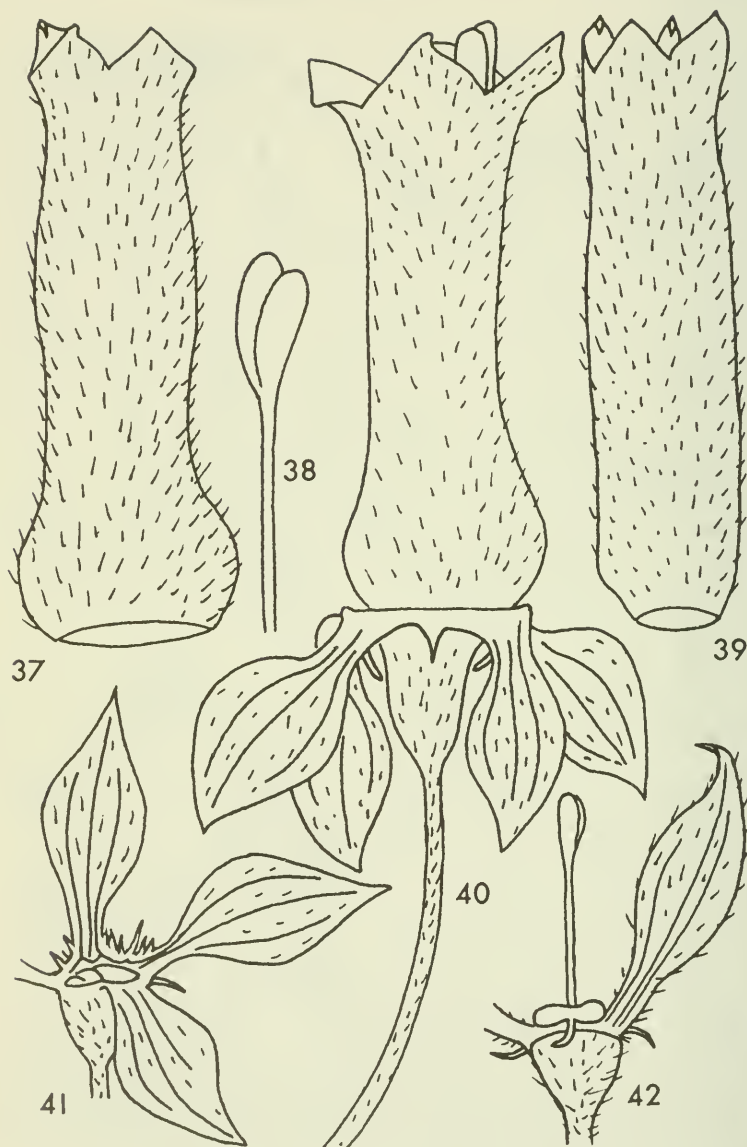
Figs. 6-13. Manettia pedunculata var. pedunculata (Freire Allemo, G). 6. Flower, x2. 7. Stigmas. 8. Hair from lower part of corolla, x100. 9-13. Hairs from upper part of corolla, x100. Fig. 14. Hair from lower part of corolla, x100, M. pedunculata var. ciliata (Riedel 619, BM). Figs. 15-17. M. campanulacea (Saint-Hilaire B1:42, P). 15. Pistil, x5. 16. Corolla, x2. 17. Ovary and calyx-lobes, x2.



Figs. 18-26. *Manettia luteo-rubra* (Regnell I: 369). 18-19. Short-styled flower, x4 (S). 20-22. Hairs from corolla-tube of short-styled flower, x100 (S). 23-26. Hairs from corolla-tube of long-styled flower, x100 (K).

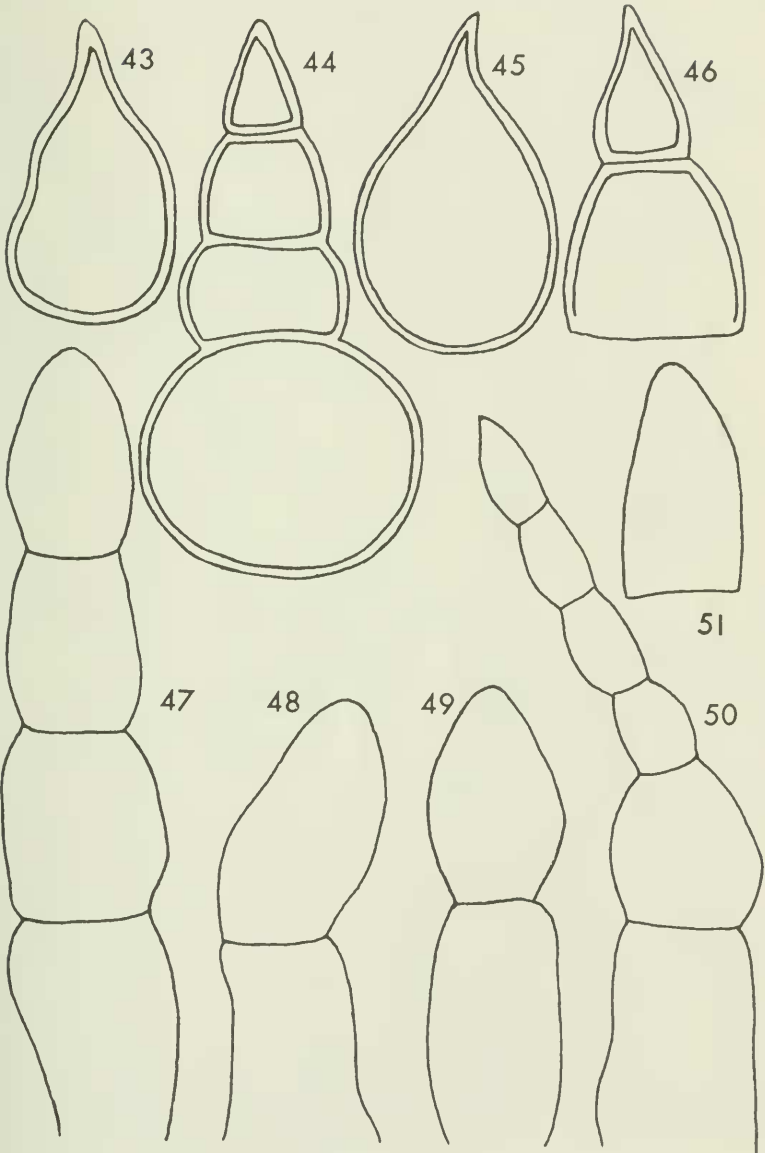


Figs. 27-36. Manettia luteo-rubra. 27-28. From short-styled flower, x4 (Gardner 5739, K). 29-31. Hairs of corolla-tube (28), x100. 32-33. From long-styled flower, x4 (Mosen 1343, S). 34-36. Hairs of corolla-tube (32), x100.

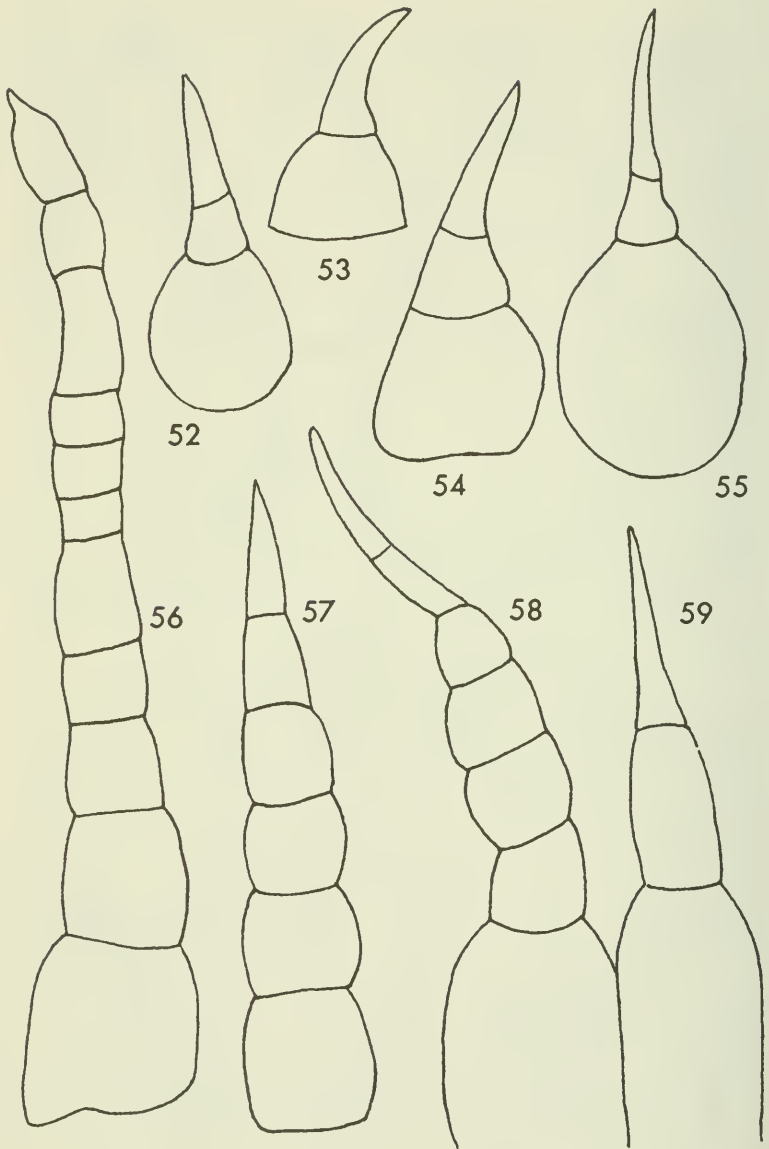


Figs. 37-42. *Manettia luteo-rubra* var. *paraguariensis*, x4, 37-38. From short-styled flower (Hassler 4502, NY). 39. Corolla of short-styled flower (Hassler 4502, P). 40. Long-styled flower (Gibert 728, K). 41. From Hassler 8906 (NY). 42. From Dusen 7522 (S).

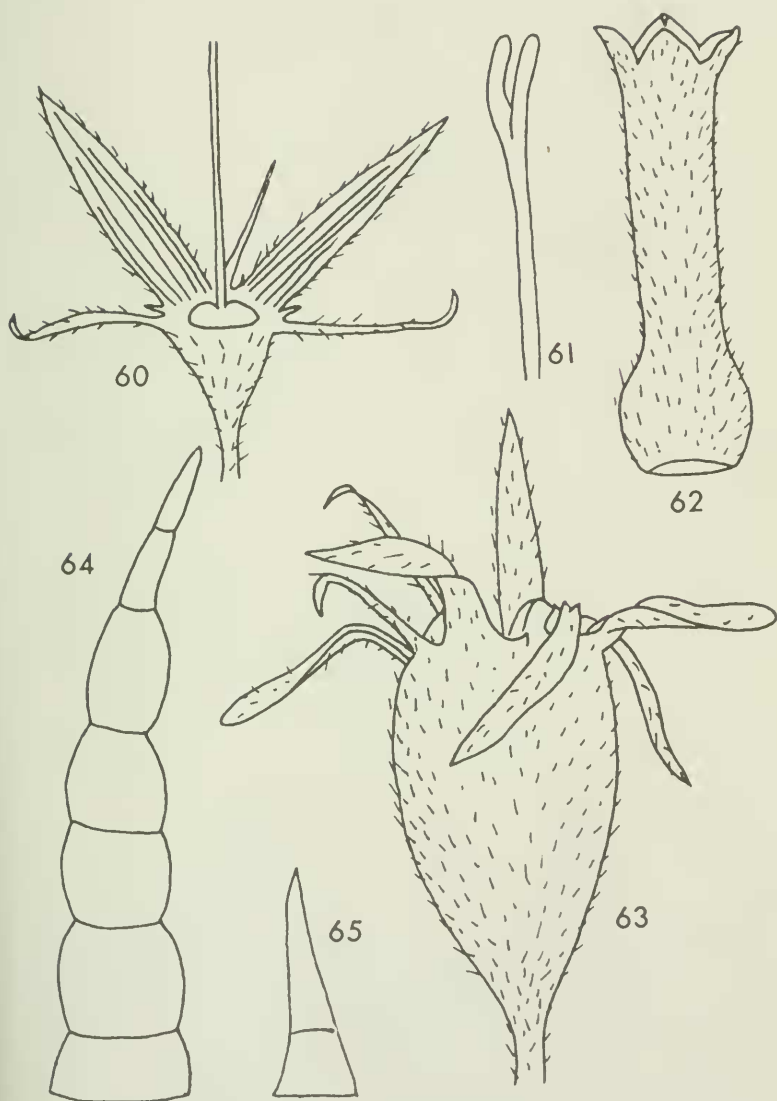




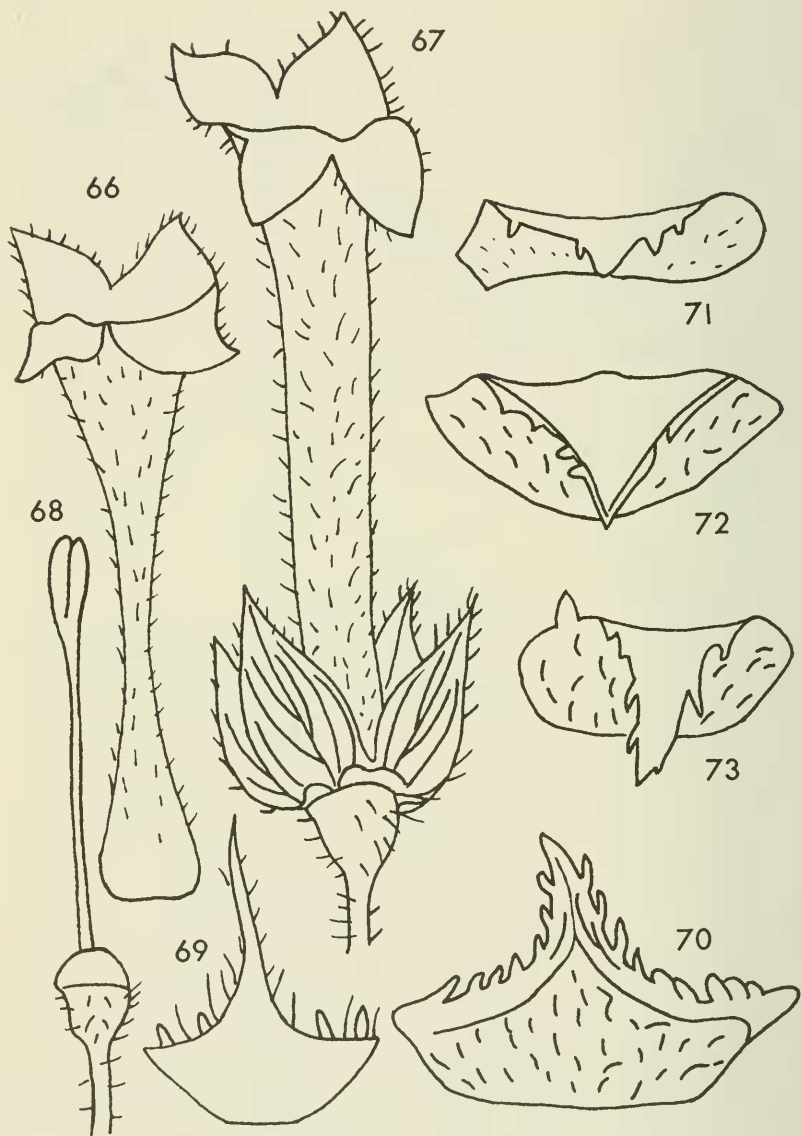
Figs. 43-51. Manettia luteo-rubra var. paraguariensis (Gibert 728, K), x100. 43-46. Hairs of corolla-lobes. 47-51. Hairs of corolla-tube.



Figs. 52-59. *Manettia luteo-rubra* var. *paraguariensis* (Hassler 4502, NY), x100. 52-55. Hairs of corolla-lobes. 56-59. Hairs of corolla-tube.



Figs. 60-65. *Manettia quinquenervia* (Mueller 122, K). 60. x4.  
 61. x10. 62-63. x4. 64. Hair of corolla-tube, x100. 65. Hair  
 of corolla-lobes, x100.



Figs. 66-69. *Manettia calycosa*. 66-68. Short-styled flower, x4 (Pittier 10756, G). 69. Stipule, x10 (Pittier 13057, G).  
 Figs. 70-73. Stipules of *M. luteo-rubra*, x10. 70. Var. *luteo-rubra* (Regnell I: 369, S). 71-73. Var. *paraguariensis*. 71. Gibert 728 (K). 72. Hassler 8906 (GH). 73. Lillieskold (S).